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## ESSENTIALS OF WORKMEN'S COMPENSATION STATISTICS<sup>1</sup>

Experience will warrant the generalization that the development of social statistics follows administrative need. So long as sickness insurance, labor exchanges, or old-age relief are matters of agitation merely, so long are trustworthy statistics of morbidity, unemployment, or old-age dependence unobtainable; but when appropriate administrative machinery is created to deal with these problems, a body of accurate and significant information is gradually accumulated.<sup>2</sup> The rule holds with especial force of accident prevention and relief. Five years ago the very number of industrial injuries in the United States, or even in any one commonwealth, was a subject for scientific conjecture;<sup>3</sup> the first workmen's compensation laws were perforce based upon European experience and upon such fragmentary knowledge as could be collected by special investigative commissions.<sup>4</sup> Now, however, that twenty-four states have enacted such laws, the time is at hand for the compilation of American accident experience upon a scientific basis. Unfortunately, nine of the compensation states have provided no administration worthy of the name, and, needless to say, have but meager and untrustworthy statistics.<sup>5</sup>

What is more remarkable, many even of the compensation boards have not seen fit to undertake any record of accident or compensation experience. In point of fact, only Massachusetts, New Jersey, Washington, California, Ohio, and Wisconsin have hitherto compiled or published anything in the shape of accident statistics. Even this slender total is of very unequal value; the

<sup>1</sup> The writer's thanks for helpful suggestions and illustrations are due to Mr. William Burhop and Miss Myrtle Snyder of the statistical staff of the Industrial Commission of Wisconsin.

<sup>2</sup> Cf. Rubinow, *Social Insurance*, pp. 51, 213.

<sup>3</sup> Cf. Hoffman in *Bulletin of U.S. Bureau of Labor*, No. 78.

<sup>4</sup> Cf. Downey, *History of Work Accident Indemnity in Iowa*, chap. vi.

<sup>5</sup> The annual reports of the Employers' Liability Commission of New Jersey will illustrate the point.

reporting of accidents is not upon a uniform basis<sup>1</sup> and there is yet wider diversity in the classifications of industries, of the causes of accidents, and of the nature of injuries. It is much, however, that a beginning has been made. Beside the seven states above enumerated, Illinois and New York are preparing to do statistical work and other commonwealths may be expected to follow suit. Moreover, hopeful movements are under way to secure uniformity or at least comparability, among the several states. The moment is opportune, therefore, for a discussion of what is most essential in the way of workmen's compensation statistics.

Such statistics should subserve a threefold function: (1) accident prevention, (2) administration of existing compensation laws, and (3) the enactment of further legislation. The statistical record, accordingly, must be such as will throw light upon the causes and results of work accidents, the operation of the compensation machinery, the social effects—both of the injuries themselves and of the existing methods of indemnity therefor—and the cost of compensation under various methods of insurance or of risk distribution.

#### I. STATISTICS FOR ACCIDENT PREVENTION

For accident prevention the most needful information is that pertaining to the causes of accidents. By "cause" is here meant, not the whole of the antecedent circumstances, but the immediate physical instrumentality which produced the injury, or the manner in which the accident immediately occurred. The point may be made clearer by concrete illustration. A workman on his way to a drinking-fountain stumbles over a pile of scrap in the gangway and throws his hand into the open gear of a bulldozer, with the result that the fingers are crushed off; the unguarded gear, and not the pile of scrap, is the proximate cause of the injury, though both contributed thereto. A boy jumps onto a moving elevator and is crushed by the automatically descending gates; his act was reckless, if you please, but a proper gate would have prevented the accident and the device actually used must be treated as the

<sup>1</sup> All accidents are reported in Massachusetts, all accidents for which claims are presented in Washington, all which cause disability for more than seven days in Wisconsin, etc.

proximate cause thereof. The secondary or contributing circumstances are very important for intensive studies of particular classes of accidents, but the proximate cause, in the sense above defined, is the fact of prime consequence for prevention and would appear, therefore, to be the proper basis for a generic classification.<sup>1</sup>

To be of much use the analysis of proximate causes must descend to minute details. It is not enough to know that such and so many accidents occurred upon ladders. It is needful to distinguish falls *from* ladders, due to defective rungs, loss of balance, etc., and falls *with* or *of* ladders, due to slipping or toppling over. The rationale of these distinctions lies in the different means of prevention: slipping and toppling over are preventable by steel shoes at the bottom and fastenings at the top of the ladder, or better still by

<sup>1</sup> Mr. Fred Croxton, chief statistician of the Industrial Commission of Ohio, has adopted the "primary" cause as the basis of classification. By "primary cause," in this connection, appears to be meant the circumstance which immediately initiates a train of events resulting in injury. In the bulldozer illustration above cited, Mr. Croxton would charge the injury to the pile of scrap. Similarly, he would charge to emery wheels both those injuries which result from the bursting of wheels and those which are due to flying particles in the ordinary course of grinding operations.

The objection to this basis of classification is that it does not point to the efficient means of prevention. Had the bulldozer gear been properly inclosed some injury might have resulted from stumbling over the pile of scrap but the particular mutilation which did result would not have occurred. Gear injuries are very different in character from stumbling accidents and the means of prevention are of quite another kind. An open gear exposes all who work or pass in its vicinity to a definite hazard. A littered aisle, apart from unguarded machinery, presents a different and much less serious hazard.

Further, starting from gears as the primary cause, it is comparatively easy to analyze gear injuries with respect to the several classes of contributory circumstances—wearing of loose sleeves, cleaning, oiling, or adjusting gears while in motion, slipping on wet or greasy floors, stumbling over scrap, etc. But if each of these contributing circumstances is treated as a primary cause, then when it is desired to illustrate the importance of inclosing all gears, it will be necessary to pick out the gear injuries from a dozen or more cause classes. Be it repeated, it is for the sake of prevention that accident causes are important and the efficient preventive of all gear injuries is the proper covering of gears.

So with the emery-wheel illustration. When an unprotected emery wheel bursts, everyone in the vicinity is exposed to grave danger from the flying fragments; the preventive is a solid hood which incloses the whole wheel save the few inches of grinding surface. But the flying particles from ordinary grinding operations are not retained by the hood; their menace is to the eyes of the operative, and the preventive is a pair of safety goggles.

a stationary ladder; loss of balance may be prevented by avoidance of excessive loads and by care that the workman shall always have one hand free while on a ladder; defective rungs are discoverable by proper inspection, and so on. So with the very numerous class of "hits": hits with flying nails, preventable by the use of corrugated hammers, are to be distinguished from hits received in grinding or chipping, against which workmen may be protected by the use of goggles or of mica shields. Accident causes, then, are to be distinguished according to the appropriate modes of prevention; no other principle of classification is of much value for the purpose in hand. To furnish this information in usable form very numerous classes of causes must be distinguished. For Wisconsin industries alone some two hundred and fifty separate classes have been found necessary.

A detailed analysis of the proximate causes of accidents is the only safe guide for the drafting of safety rules or standards, whether by public authority or by private employers. For this purpose, however, mere *frequency* of accidents is not sufficient. The *gravity*, as well as the number, of the resultant injuries must be known to gauge the relative importance of different causes. Accidents upon cylinder-head jointers, e.g., are not infrequent. Indeed, such injuries are perhaps more numerous at the present day than those upon the obsolescent square-head buzz-planer. But, whereas the square-head jointer commonly maimed its victim for life, the "safety-head" rarely does more than "nip" the fingers. To serve the purpose of safety standards, therefore, accident causes must be correlated with the character of injury—fatal, permanent total, permanent partial, temporary—and with the duration of temporary disability. The cost of indemnity and medical aid also furnishes a valuable and striking indicium of accident gravity, but this index can be used only for comparisons under the same or closely similar compensation laws. Lastly, the causes of accidents require to be correlated with industries and industry groups. The number and character of "handling" accidents tell us little about possible preventive measures so long as logging, teaming, stevedoring, and sheet-metal accidents are lumped together. But so soon as the handling of accidents in sheet-metal works or agricultural implement

factories are considered by themselves, the details begin to take on significance. In practice,<sup>1</sup> it has been found convenient, first to arrange the accidents of each industry group by causes and character of injury, and then to make two general tabulations showing, respectively, causes by industries and character of injury by causes.

Doubtless it would be highly useful, if only the requisite data were obtainable, to compare the frequency and gravity of accidents from each cause with the extent of *exposure* thereto. That 948 injuries occurred on rip saws and only 35 on set screws<sup>2</sup> says nothing of relative hazard until the number of workmen exposed to these two sources of danger, respectively, is known. Unfortunately no state has, or is likely soon to obtain, information sufficient for such a comparison. Nothing less would be required than an exhaustive and current physical survey of industrial establishments and it is doubtful whether the benefits would be worth the cost. The gross number and character of injuries from any cause will sufficiently indicate its relative importance in a campaign for prevention. And knowledge of relative aggregate importance is a practical, albeit a somewhat rough-and-ready, guide for the drafting of safety standards. It is possible, however, to measure accident frequency and gravity in terms of exposure for particular industries, localities, and establishments, thus obtaining a very useful indication of the weak spots in the safety work of the state or of the employer.

It was mentioned above that the secondary causes, or conditioning circumstances, of industrial accidents are best analyzed in special studies. Such factors as fatigue, rate of work, age and sex of workers, alcoholism, physical and mental defects, rarely can be separated in the general analysis, because the data in hand usually are inadequate. We know, e.g., that the peak of accident frequency occurs between ten and eleven o'clock in the forenoon with a secondary peak between three and four in the afternoon. But this does not necessarily mean that fatigue has no effect in

<sup>1</sup> In the Industrial Commission of Wisconsin.

<sup>2</sup> The actual numbers reported to the Industrial Commission of Wisconsin during thirty-one months.

increasing liability to injury.<sup>1</sup> In the figures usually quoted the effects of fatigue are crossed and obscured by the effects of the rate of work, and of the number working at different hours of the day. So with the familiar Monday peak of accidents. It is matter of common knowledge that changes of employment are by preference made on Monday, and this factor may well outweigh "the weekend spree" to which the Monday peak is popularly attributed. The meaning of such facts may sometimes be made clear by proper correlation, as by combining the day of the week with the length of experience in the same establishment or by correlating the age distribution of injured workmen with suitable statistics of adolescent labor, where such exist. Generally speaking, however, the methods of mass statistics are too coarse for the interpretation of any but proximate causes of work accidents.

Not much need any longer be said of personal *fault* in relation to industrial accidents. It is now generally recognized that the pains which have been expended to assign their due meed of blame to employers, workmen, and the inherent hazards of industry have yielded few results of value. Fault is a subjective fact. Statistics of fault vary remarkably with the sources of the original data and with the latitude which the compiler allows himself. If the question is left to employers, substantially all work injuries are reported as due to the negligence of the injured. If an attempt is made to adjudge fault on the basis of specific facts the results will greatly depend upon arbitrary definitions and the personal bias of the statistician. Is the wearing of loose sleeves at a flat-work ironer, or of lace shoes in a foundry, an evidence of original sin or of a defect in shop organization? Is horseplay on the part of boys a proof of unusual recklessness, or simply a normal attribute of youth? Shall we blame the child for his childish heedlessness, or the employer for placing him in a post of danger, or the state for tolerating his employment? It is just because such questions are matters of judgment that the percentage of work accidents attributed to the "fault" of workmen was 41.26 in Germany,

<sup>1</sup> For an amusing misinterpretation of this well-known phenomenon see *Second Annual Report of the Industrial Insurance Department of the State of Washington*, pp. 98, 99.

23.53 in Wisconsin, and 21.05 in Minnesota.<sup>1</sup> Such irreconcilable discrepancies do not arise with respect to objective facts.

Not only are statistics of fault utterly untrustworthy; in the mass, they are useless for accident prevention. "Greater care" is an easy suggestion, but it lacks definiteness. In so far as carelessness is not another name for youth, inexperience, excessive speed, fatigue or monotony, it is a defect of habit, the corrective for which is education in habits of safety. What is wanted for the purposes of such instruction is knowledge of the specific acts or omissions which produce or condition industrial accidents. This is precisely the information which an adequate analysis of accident causes will furnish.

The mere compilation and publication of accident statistics, however excellent in themselves, will go a very short way toward the promotion of industrial safety. Accident prevention, when all is said, must be achieved by the men actually on the job. The state, at most, can set up standards and stimulate the efforts of employers and workmen. In this educative work which is fundamental to the safety movement, accident statistics may play an important part, but only on condition that the statistical information is brought home in intelligible form to the manager in his office and the workmen in the shop. On this principle are based the "shop bulletins" of the Industrial Commission of Wisconsin—each a compact treatise of some one class of accidents, as eye injuries, gear accidents, or molten metal burns, written in ordinary shop language, illustrated with cuts and succinct statistical tables designed to enforce the lesson of prevention, and placed in the hands of the managers, superintendents, and foremen of the industries immediately affected. Another device for accomplishing the same result is the blueprints of causes of accidents, especially useful in public meetings and "round tables." The commission also analyzes and compares the accident records of particular establishments for the use both of its own deputies and of the employers concerned. This last device has been still more systematically

<sup>1</sup> See *Bulletin of the U.S. Bureau of Labor*, No. 92, pp. 64, 65 (Germany, 1907); *Report of the Bureau of Labor Statistics*, Wisconsin, 1907-8, p. 4; *Twelfth Biennial Report of the Bureau of Labor*, Minnesota, p. 188.

and effectually employed by the Industrial Accident Board of Massachusetts in promoting safety organizations.

## II. STATISTICS FOR THE ADMINISTRATION OF COMPENSATION

Of administrative statistics the most important are those relating to the settlement of claims. The number and character of compensatable accidents reported and compensated, the claims, distinguished according to character of injury, which are settled by agreement, arbitrated, brought before the administrative board, or carried through the courts, the length of time required for the disposal of claims by the several modes provided by law, claims allowed or rejected by arbitrators, commissions, or courts, and the grounds of rejection, applications for payment in gross granted or refused, and the reasons therefor, the amount of indemnity and of medical benefit paid for each class of injuries, the cost of administration with the legal and other costs of adjusting claims, cases of delay in the beginning of indemnity or the furnishing of medical relief—such are the facts of greatest significance from an administrative standpoint. Statistically considered the problems are simple and they have been passably solved by most compensation boards. Unfortunately, too many of the commissions have contented themselves with totals and averages wherein the different classes of cases are lumped together.<sup>1</sup> An “average indemnity per case,” an average delay in the settlement of claims, or a percentage of agreements to total cases, which includes deaths, permanent disabilities and minor injuries, is worse than meaningless; it is misleading. There is, too, a notable lack of what may be termed administrative efficiency statistics to show the promptness, or the want of it, with which compensation cases are decided. When all allowances are made, however, the published reports of the several compensation boards constitute a reasonably adequate administrative record—all the more creditable by contrast with the total absence of such records in states whose compensation acts are administered by courts.

## III. STATISTICS FOR FURTHER LEGISLATION

That the existing compensation laws, passed in response to a somewhat sudden popular demand and framed without adequate

<sup>1</sup> This is true, as respects its *published* reports, even of the Industrial Commission of Wisconsin.

knowledge of the conditions to be met, would solve the problem of accident indemnity could hardly have been expected by their most ardent advocates. In point of fact, experience already has developed the gravest defects in scope, in scale of indemnity, and in administrative control, insomuch that hardly a single law enacted in 1911 remains without important amendments.<sup>1</sup> When it is called to mind that even the most liberal of American statutes falls considerably short of full indemnity, that quite one-half of the commonwealths are without any compensation laws, and that interstate and foreign commerce are still subject to the vicious system of employers' liability, it must be evident to the most dull that workmen's compensation in the United States has barely entered upon a long course of development. In order that future legislation may be grounded upon something better than guess-work, it is highly important that the actual working of the existing laws should be subjected to the closest scrutiny. Statistics alone can furnish the basis for such a study.

The information required for the guidance of legislators pertains to the social effects of compensation and to the cost of proposed enactments. A study of social effects is necessary to reveal the shortcomings of existing laws and an analysis of costs is required to test the practicability of suggested changes.

1. We need to know, first of all, to what extent work accidents are indemnified, and how far destitution from this source is prevented, by our present laws. The adequacy of indemnity is easily tested. A comparison of wage loss and medical costs incurred with pecuniary benefits received, for each class of injuries, will tell the story. But to ascertain the facts of privation or relief we must follow the injured workman to his home. We must learn how the "waiting period," the occasional delays in settlement, and the reduction of income after compensation begins affect the family budget, how the family readjusts itself when the death benefit ceases, and what becomes of the totally incapacitated worker who unfortunately survives the six- or nine-year period of indemnity. These are precisely the facts which ordinary accident statistics fail to reveal. The reports show the character and extent of the

<sup>1</sup> Cf. Downey, "Workmen's Compensation in the United States: A Review," in the *Journal of Political Economy*, XXI, 913-30.

injury, the surgical results, the wage loss, and the amount of compensation, but they do not, and cannot, give the subsequent history of the victim and his family. To judge whether compensation is adequate, considered as relief, special field studies, by the case system, will be required.

It must not be forgotten, withal, that a workmen's compensation act which merely indemnifies loss or relieves distress has fulfilled but a part of its function. To save an arm is better than paying the actuarial value thereof, and to restore a workman's earning capacity is better than to pension him for life. Hence the importance of analyzing surgical results—the duration of disability from the several classes of injuries, the number of infections, the proportion of fractures and dislocations which result in permanent stiffness of the part affected, and the percentage of amputations in particular kinds of injuries. So much should appear from the reports themselves. Comparisons of the records of employers, insurance companies, industries, localities, and states, in respect to such results, will search out any shortcomings in the promptness and quality of medical aid.

Surgical results, however, by no means tell the whole story. What are the prospects that a one-armed man, trained only to common labor, will be able to find suitable employment, and at what wages? Does the loss of a ring finger permanently impair earning capacity, and to what extent? Should the scale of indemnity be higher for "right" than for "left" injuries, and how much? These and the like questions can be answered only by special field studies, such as the inquiry made by the Industrial commission of Wisconsin into farm accidents, or the similar investigation of 213 permanent injuries.<sup>1</sup>

2. Statistics of cost are important, not only for the determination of insurance rates, but because the cost to employers is the ground of resistance to adequate compensation. Every proposal to reduce the "waiting period," to furnish full medical aid, or to extend the term of indemnity for death or permanent disability is met by the familiar wail that the increase will overburden

<sup>1</sup> *Bulletin of the Industrial Commission of Wisconsin*, Vol. I, No. 5a, and Vol. II, No. 6.

industry, unsettle business, and drive capital out of the state. Therefore the administrative authority should be able to predict with approximate accuracy the effect of any given legislative change upon the total cost of compensation.

To this end a detailed analysis of accident experience is requisite. To know the aggregate amount of indemnity and medical relief, or even the amount paid, respectively, for deaths, dismemberments, and temporary disabilities<sup>1</sup> will avail little. The analysis must be carried far enough to show, for instance, not merely the number of finger injuries, but the number of right index fingers amputated at the distal joint. That is to say, the accidents must be *distributed* in detail by character of injury and part of the body affected. Only when the gravity of injury, as measured by the duration of temporary, and the degree of permanent, disability, and the cost of indemnity and medical aid are known for each class of injuries in such a detailed distribution, will an adequate basis be obtained for cost computations. Accident statistics in this country, hitherto, have commonly failed at this point. Injuries have been distributed only in the rough, or else the classifications have been limited by the requirements of particular statutes;<sup>2</sup> gravity and cost have been correlated sometimes with the nature of injury, sometimes with the part of the body affected, but rarely with both at the same time; the medical cost for all accidents has been lumped together and a meaningless "average per case" obtained. Hence it has not been possible to predict the effect of amendments, or to make comparisons between states, with any accuracy.

For insurance rate-making the cost of compensation must be compiled by industries and computed in percentage of payroll. But the industries of a single state rarely furnish a sufficient exposure for sound rate-making. A much better basis will be obtained

<sup>1</sup> The divisions upon "Schedule Z" of the Massachusetts Insurance Department, 1913.

<sup>2</sup> The statistics of the Industrial Accident Board of Massachusetts, in many respects the most valuable yet published, suffer from this defect. All accidents causing disability for two weeks or less were lumped together, so that it was not possible to estimate the effect of a proposed reduction of the "waiting period" to one week. The specific indemnity for the dismemberments enumerated in the act was set out, but not the temporary total disability benefits or the medical cost for the same, nor was any account taken of dismemberments not enumerated in the law. See *First Annual Report of the Industrial Accident Board* (Massachusetts), pp. 319, 321, 323, etc.

by using the combined experience of all compensation states and applying a system of differentials corresponding to differences in accident frequency and in the scale of compensation. For this purpose the detailed accident analysis above spoken of is indispensable. Moreover, in view of frequent amendments, the like analysis is almost equally necessary for interpreting the experience of a single state. It may be said that this is a task which properly devolves upon insurance carriers. Workmen's compensation insurance, however, is strongly affected with a public interest. Both the adequacy and the reasonableness of rates are matters of social concern. The fact of a controlling public interest has been recognized by making this branch of insurance a state monopoly in Ohio, Washington, Oregon, and West Virginia, and by sundry less drastic experiments in regulation. Even where there is no official control of insurance practices employers will naturally wish to know whether they are being overcharged as compared with their competitors in other states. On every ground, therefore, an official compilation of the data required for insurance rate-making is highly desirable. Fortunately, the statistics needed for other purposes will, in great measure, serve this function also. An analysis of accidents by industries and by the nature and gravity of injury is necessary for effective safety work. Statistics of cost, analyzed by industries and by character of injury, are required for intelligent legislation. Cost expressed in percentage of payroll gives the "pure premium" from which insurance rates are computed. It is only necessary to add an analysis of the "expense loading"—disbursements for solicitation of business, inspection of risks, settlement of claims, taxes, and home office expenses.

If the foregoing argument is well taken, the foundation of compensation statistics is scientific classification of industries with respect to nature and degree of hazard, of the proximate causes of accidents with reference to modes of prevention, and of the physical results of accidents by nature of injury and part of the body affected. It goes without saying that the original data, in the way of accident reports, must be satisfactory, that proper correlations must be made, and that much information not assignable to these heads will be called for. But these three classifications are fundamental.

Faulty analysis or failure of insight here will vitiate the whole statistical superstructure. Vice versa, reasonable adequacy and uniformity will go far toward making the experience of each state available to every other. Unfortunately, neither adequacy nor uniformity mark the fundamental classifications now used. Least of all is there any satisfactory classification of industries. The census grouping, based as it is upon the nature of materials or products, bears no relation to hazard and is utterly unsuited to the needs of accident statistics. The insurance manual is a chaotic welter of some fourteen hundred classes, based upon no consistent principle and abounding in distinctions without rhyme or reason. Notwithstanding, in the absence of anything better, the census classification has been adopted by the Industrial Accident Board of Massachusetts, while the insurance manual is used in unmitigated form by the Industrial Commission of Ohio and the Insurance Department of Massachusetts, and with certain regroupings by the Industrial Insurance Department of Washington and the Industrial Commission of Wisconsin.<sup>1</sup> The result is highly confusing. Comparisons between the published reports of Wisconsin and Ohio or Washington can be made only after laborious analysis and regrouping; comparisons with Massachusetts cannot be made at all. Even the Insurance Department of that state is unable to use the rich accident experience of the Industrial Accident Board.

In view of this situation, it is a matter for regret that the numerous conferences on uniform accident statistics should have devoted so much attention to the comparatively minor question of a uniform accident report blank. No one will deny that the original reports are a condition precedent to any statistics or that a standard blank is very desirable. But the facts of real importance for accident statistics—the manner in which the accident occurred, its surgical results, the duration of disability, the wages of the injured workman, the amount of indemnity and of medical relief—are pretty certain to be obtained by any compensation board.

<sup>1</sup> In the Wisconsin classification, begun in the fall of 1913, the grouping made by Dr. I. M. Rubinow, chief statistician of the Ocean Accident and Guaranty Corporation, was taken as the point of departure. The same starting-point has since been used by the statistical committee of the Workmen's Compensation Service Bureau in its recent regrouping of manual classifications.

The real difficulty is the education of employers in making reports. Meanwhile there has been but scant discussion of the weightier problems which confront compensation statisticians.

This singular oversight is about to be remedied. The National Conference on Standardization of Accident Reporting and Tabulation, promoted by the United States Bureau of Labor, already has agreed upon a definition of a reportable accident, upon a standard first report blank<sup>1</sup> and upon the time limit for the first report of accidents, and has appointed committees on statistical classifications which will report at the next meeting of the conference. These committees will have the benefit of the elaborate classifications developed by the Workmen's Compensation Service Bureau,<sup>2</sup> as well as of those which are in use in the several compensation states and in European countries. It is hoped that these committees will have finished their work in time for definite action at the next annual meeting of the National Association of Workmen's Compensation Boards. There is good prospect, therefore, of an early agreement upon standard and reasonably satisfactory classifications of industries, of accident causes, and of injuries. This will do much to bring order out of chaos and to put workmen's compensation statistics in the leading states on a sound basis.

Workmen's compensation is the one branch of social insurance which has made considerable headway in the United States. Statisticians in this field, therefore, have a rare opportunity for public service. If they grasp their problem with intelligence and courage, if they neither sacrifice correct theory to propagandism nor become so technical as to pass all understanding, they can effectually further the progress of accident prevention and relief. Theirs, moreover, is the work of pioneers. Sound statistics of workmen's compensation will straighten the paths of statisticians in social insurance at large, as its several branches shall be successively evolved.

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<sup>1</sup> Substantially the blank recommended by the American Association for Labor Legislation.

<sup>2</sup> The bureau is a "ring," or loose confederation of some twenty casualty insurance companies (the number varies from time to time) which agree to maintain the same minimum rates and otherwise restrict competition among themselves.